Zoe Krauss

Ph.D Candidate, University of Washington

zkrauss@uw.edu
zoekrauss.github.io
(847)-873-4056

EDUCATION

Ph.D. University of Washington, School of Oceanography — *Anticipated 2025*
Marine Geology & Geophysics; Advisor: William S. D. Wilcock

M.S. University of Washington, School of Oceanography — 2021

B.A. Colorado College — 2019
Physics major: Geophysics emphasis; Magna cum laude, Phi Beta Kappa

PUBLICATIONS

Krauss, Z., Wilcock, W.S., & Baillard, C. (in prep). Mid-ocean ridge shallow structure inhibits single-station earthquake location: Endeavour segment seismicity from 2011-2016.

Krauss, Z., Ni, Y., Henderson, S., & Denolle, M. (2023). Seismology in the cloud: guidance for the individual researcher. Seismica, 2(2). https://doi.org/10.26443/seismica.v2i2.979.

Krauss, Z., Wilcock, W. S., Heesemann, M., Schlesinger, A., Kukovica, J., & Farrugia, J. J. (2023). A Long-Term Earthquake Catalog for the Endeavour Segment: Constraints on the Extensional Cycle and Evidence for Hydrothermal Venting Supported by Propagating Rifts. Journal of Geophysical Research: Solid Earth, 128(2), e2022JB025662.

Krauss, Z., & Menke, W. (2020). The Northern Gulf Anomaly: P-and S-wave travel time delays illuminate a strong thermal feature beneath the Northern Gulf of Mexico. Earth and Planetary Science Letters, 534, 116102.

Almendros, J., **et al**. (2020). BRAVOSEIS: Geophysical investigation of rifting and volcanism in the Bransfield strait, Antarctica. Journal of South American Earth Sciences 104: 102834.

Borella, J., Quigley, M., **Krauss, Z.,** Lincoln, K., Attanayake, J., Stamp, L., Lanman, H., Levine, S., Hampton, S. & Gravley, D. (2019). Geologic and geomorphic controls on rockfall hazard: how well do past rockfalls predict future distributions?. Natural Hazards and Earth System Sciences, 19(10), 2249-2280.

WHITE PAPERS

Krauss, Z., Eilon, Z., Parnell-Turner, R., Janiszewski, H., Worthington, L., Kidiwela, M., & Brunsvik., B. (2021) Call to expand ocean bottom seismograph (OBS) facilities and instrument pool for ambitious Rift2Ridge science. 2021 Rift2Ridge Workshop.

SEMINAR TALKS

Slow slip in shallow Cascadia: looking for tremor on ocean bottom seismometers. Marine Geology and Geophysics Seminar, University of Washington. (2023)

Long-term seismic data unlocks the story of a mid-ocean ridge. Ocean Networks Canada Lunch and Learn, general audience. (Invited, 2023)

Long-term and real-time seismic monitoring of a mid-ocean ridge. Pacific Geoscience Center-University of Victoria Seminar. (Invited, 2023)

Machine-learning-based detection of offshore earthquakes. Data Science Seminar, University of Washington. (2022)

Building and interpreting an earthquake catalog for the Endeavour segment. Seismolunch Seminar and the Marine Geology and Geophysics Seminar, University of Washington, virtual. (2021)

Deep structure of the Northern Gulf of Mexico from Seismic Data. USGS Menlo Park and Stanford Reading Group, virtual. (Invited, 2021)

AWARDS	NDSEG Conference Exemplary Poster Award	2022
	AGU Outstanding Student Presentation Award (OSPA)	2021
	National Defense Science and Engineering Fellowship (NDSEG)	2020
	Full tuition and annual $38,000 stipend support for 3 years	
	Travel allowance of $5,000	
	NSF Graduate Research Fellowship	2020
	Declined in favor of the NDSEG	
	ARCS Fellowship, University of Washington	2019
	$17,500 of additional support over 3 years	
	NSF Graduate Research Fellowship, Honorable Mention	2019
	Association of Women Geoscientists Outstanding Student Award	2019
	Cowperthwaite Award for Excellence in Physics	2019
	Awarded by the Colorado College Physics Department	

CONFERENCE PRESENTATIONS	Invited: AGU Fall Meeting, San Francisco Near-real-time Seismic Monitoring of Tectonically-Influenced Mid-ocean Ridge Hydrothermal Vent Fields	Upcoming: 2023
	AGU Fall Meeting, San Francisco *Offshore Seismic Signals of Deformation in the Shallow Cascadia Subduction Zone*	Upcoming: 2023
	SSA Annual Meeting, San Juan, PR (poster) *Constructing Cloud Resources for the Individual Researcher From the Ground Up: An Example of Earthquake Detection in the Cloud*	2023
	AGU Fall Meeting, Chicago, IL (poster) *Investigating microearthquake multiplets using ocean bottom seismometers in a mid-ocean ridge hydrothermal field*	2022
	NDSEG Fellows Conference, Boston, MA (poster and talk) *Using real-time offshore seismic observations to understand the seafloor spreading cycle*	2022
	SSA Annual Meeting, Bellevue, WA (poster) *Long-term Earthquake Catalog for the Endeavour Segment of the Juan De Fuca Ridge Highlights the Influence of Propagating Rifts on Hydrothermal Venting*	2022
	AGU Fall Meeting, virtual (talk) *Long-term earthquake patterns at the Endeavour Segment, Juan de Fuca Ridge*	2021
	Rift2Ridge Workshop, virtual (lightning talk)	2021

Lessons from multiple decades of observations on the Endeavour Segment

Marine Seismology Symposium, virtual (live short talk)   2021
Building a Multidecadal Microearthquake Catalog for the Endeavour Segment of the Juan de Fuca Ridge

COMPUTATIONAL EXPERIENCE	***Proficient in Python and Matlab*** ***Experience with cloud computing (Azure), Git, Linux systems***	
& SUPPORT	**University of Washington Azure Cloud Support** $5,000 of Azure cloud computing credits to use toward the documentation of time and cost scaling of seismic workflows.	2023
	University of Washington eScience Cloud ReproHack Week Chosen to work alongside Microsoft Azure cloud computing experts to migrate local workflows onto the cloud.	2022
	University of Washington Azure Cloud Support $20,000 of Azure cloud computing credits to use towards the creation of earthquake catalogs using machine learning.	2022
	University of Washington eScience Incubator Program Accepted to work one-on-one with a professional data scientist for 10 weeks to create a machine-learning-based earthquake catalog curation workflow using cloud computing resources.	2022
ADDITIONAL ATTENDED MEETINGS	USGS Cascadia Subduction Zone Science Meeting, Seattle, WA	2023
	SZ4D Community Meeting, Houston, TX	2022
	USGS Cascadia Subduction Zone Science Meeting, Seattle, WA	2020

TEACHING AND MENTORSHIP	**Data Science in Oceanography Summer Program**
	 Mentor, University of Washington
	   Prepared and led Python tutorials on introductory seismic analysis
	   Gave introductory lecture to Marine Geology and Geophysics
	   Served as mentor for an undergraduate project
		2022

	OCEAN 201: Intro to Oceanography Lab
	 Teaching assistant, University of Washington, virtual due to COVID
	   Prepared lab experiments and reports
	   Graded ~40 lab reports per week
	   Co-led synchronous lab sessions
		2021

FIELD EXPERIENCE	OBS redeployment at Axial Seamount, R/V Sally Ride	2023
	OBS deployment at Axial Seamount, R/V Langseth* *Missed due to COVID emergency	2022
	DAS deployment on OOI cabled network, Pacific City, OR	2021
	OBS retrieval at Bransfield Strait, Antarctica, R/V Hesperides	2020
	Frontiers Abroad geology field camp, New Zealand	2017